AMENDMENTS TO THE DRAWINGS:

Applicants submit herewith two (2) sheets of annotated drawings illustrating Figs. 1 and 2 with proposed changes shown in red ink, accompanied by two (2) replacement sheets incorporating the amendments.

Attachments: Replacement Sheets: (2)
Annotated Sheets Showing Changes: (2)

REMARKS/ARGUMENTS

Reconsideration of this application is respectfully requested.

As the Examiner is already aware, there is a co-pending related application Serial No. 10/593,442 being concurrently examined by this same Examiner. Although the Examiner is undoubtedly already familiar with events in that related application, under what appears to be current "duty of disclosure" protocol, the Examiner's attention is directed to the attached Form PTO/SB/08a and documents cited therein and attached hereto as appropriate, including prior office actions in the related case as well as all prior documents therein cited which are not already of record in the present application. The IDS Fee for this stage of prosecution is also attached. If the Examiner wishes to have continuing "follow-up" submissions of subsequent office actions and prior art citations from the related case into the present case, even though the same Examiner is handling both cases, it is respectfully requested that such desire be made of record so that the undersigned can attempt to provide continuing updates in the future.

As requested, a replacement sheet for Fig. 1 including the legend "prior art" is submitted herewith. In addition, a replacement sheet for Fig. 2 is likewise submitted herewith, wherein reference character "26" on the left side of the drawing has been corrected to read "20".

In response to the rejection of claims 4, 5, and 13 under 35 U.S.C. §112, second paragraph, the phrase "such as" has been deleted from these claims. In addition, the Americanized spelling of "characterization" has been substituted throughout the claims and claim 30 has also been amended so as to avoid use of the term "such" and to ensure proper antecedent basis. The Americanized spelling of "maximized" has also been substituted in claim 5.

Minor corrections have also been made to the abstract and specification.

Accordingly, all outstanding formality-based issues are now believed to have been resolved in the applicants' favor.

The rejection of claims 1-3, 6-12, 14-16, 20-23 and 28-31 under 35 U.S.C. §102 as allegedly anticipated by Cain '469 is respectfully traversed.

The technique disclosed in Cain relates to routing within a network, and uses a feedback loop which is used for managing Quality of Service (QoS) in the network. Cain, in fact, relates to an admission control system, the nodes of which are operable to police admitted traffic to ensure that once accepted/admitted, the admitted traffic does not then exceed the criteria according to which it was accepted.

In more detail, in Cain, a "Route Request" message (RREQQ) is sent from a source node towards a destination node via a plurality of intermediate nodes, the message containing a traffic flow identifier setting out a required QoS for a route. The

first intermediate node assesses whether it can meet the requirement and then accepts or rejects the request. If it accepts the request, it forwards the route request message to the next intermediate node, and this continues either until an intermediate node refuses the request or until the message reaches the intended destination node. If all the intermediate nodes do accept the request on a particular route to a predetermined destination, they then police forwarded traffic as explained above and provide the required QoS for the accepted request.

It appears reasonable to regard the route request messages (RREQQ) of Cain as data containing path characterization information of some sort as they traverse from the source node to the destination node via the intermediate nodes (since these messages contain QoS metrics). It also appears reasonable to regard the source node of Cain as performing a function corresponding to the initial function of the provider node of the present invention, this initial function being "to assign an initial condition to the path characterization metric" in respect of data it provides. Finally, it appears reasonable to regard the intermediate nodes of Cain as corresponding to the "inter-mediate nodes" of the present invention, whose function is "to update the condition of the path characterization metric" in respect of data they forward.

It is in relation to the function of the receiver node and the subsequent function of the provider node that the functions of Cain's nodes do not have corresponding functionality to the applicants' claimed nodes. According to applicants' claim 1, the receiver node:

> "*...is arranged to make available for the provider node information indicative of a discrepancy between the condition of the path characterization metric in respect of data received by it and a predetermined target condition for the path characterization metric*";

and the provider node:

> "*...is arranged to assign a different initial condition to the path characterization metric in respect of subsequent data provided by it in the event that it receives information indicative of such a discrepancy from said receiver node*".

It should be noted that Cain does not disclose anything corresponding to a "*target condition for the path characterization metric*". Cain, therefore, also fails to disclose any step of feeding back "*information indicative of a discrepancy between the condition of the received path characterization metric and the target condition for the path characterization metric*". Thus, the functionality of Cain's "destination node" does not correspond to the functionality of the applicants' receiver node. Following on from this, Cain's "source node", therefore, cannot perform a function corresponding to the subsequent function of the applicants' "provider node" because there are no circumstances under which it receives "*information indicative of such a discrepancy from*

said receiver node". Thus, the functionality of Cain's "source node" does not fully correspond to the functionality of the applicants' "provider node".

In relation to the sub-paragraph of claim 1 in which the "receiver node" is defined, the Examiner refers to Cain's paragraph [0033], and the generation by the destination node of the reply RREPQ. It will be noted from this paragraph that replies RREPQ are said to include the flow identifier and updated QoS link metric for each discovered route. There is, however, no suggestion that the replies RREPQ contain any "*information indicative of a discrepancy between the condition of the path characterization metric in respect of data received by it and a predetermined target condition for the path characterization metric*".

In fact, as Cain's replies RREPQ are only returned from the destination in the event that the requested QoS can be met over the path in question, there is no situation in which replies RREPQ could be said to indicate a discrepancy of any sort between the condition of any path characterization metric and any predetermined target condition, because replies RREPQ explicitly would not be sent in the event that there is a disparity between the requested QoS and the QoS that can be provided on the path in question.

The Examiner's analysis of the final two sub-paragraphs of claim 1 is clearly erroneous. In particular, the Examiner alleges that Cain discloses a data network in which information is fed back from a receiver node to a provider node relating to a discrepancy between the condition of the received path characterization metric and the

target condition for the path characterization metric. This is clearly not disclosed in Cain – nor is it commonplace. This was not apparently previously known in this technological field or even in any sufficiently-related technological field. A difference that should be appreciated is between the feeding back of information relating to a discrepancy (as is done according to the applicants' invention) and the feeding back of information simply relating to a final condition (which the applicants accept can reasonably be regarded as "normal" in relation to feedback mechanisms in networks).

The difference is, in fact, perhaps subtle, but surprisingly important, and results in significant advantages, which are explained in detail in the applicants' specification, but which can be summarized briefly as follows.

- Firstly, and most fundamentally, by feeding back information relating to a discrepancy between the condition of the received path characterization metric and the target condition for the path characterization metric, it becomes possible for the path characterization metrics in respect of "sub-sequent data" to provide intermediate nodes with information relating to the path further downstream (i.e., the path between the intermediate node that the data has reached and the eventual receiving point). This down-stream path information enables intermediate nodes to take routing decisions in the light of information that is not provided to them by prior art techniques. This fundamental difference is explained in particular in the

section from page 18, line 22 to page 19, line 32, and in the paragraph bridging pages 22 and 23 of the applicants' specification.

- Secondly, it removes the incentives present in prior art mechanisms for nodes to act "dishonestly" (e.g., in embodiments where the characteristic is "congestion", the invention removes the incentive for nodes to "over-declare" or "under-declare" the actual level of congestion), as there is nothing to be gained by doing so. With the incentives to act dishonestly removed, nodes are essentially incentivized to act honestly, and to provide correct information. This is explained further on pages 29 and 30 of the description.

The differences explained above in relation to claim 1 and the advantages resulting therefrom are also applicable in relation to all other independent claims. For this reason, detailed comments on these need not be provided, but the following is a brief summary of what each independent claim relates to, in order to assist the Examiner with any further analysis of the claims:

- Claim 1: An "apparatus" claim relating to the whole network (i.e., provider node, receiver node, and a plurality of intermediate nodes).

- Claim 9: A "method" claim corresponding to claim 1 (i.e., the method, as performed by a whole network such as that of claim 1).

- Claim 11: An "apparatus" claim relating to a single "feedback node" (i.e., this may be the provider node or the receiver node, depending on which of these is arranged to have the capability set out in the final sub-paragraph).

- Claim 20: A "method" claim corresponding to claim 11 with the provider node serving as the "feedback node".

- Claim 24: A "method" claim similar to claim 9, but included in order to cover a variant of the type discussed in the final paragraph of page 9

- Claim 26: A "method" claim similar to claim 9, but included in order to cover the variant discussed in the paragraph bridging pages 10 and 11.

- Claim 28: An "apparatus" claim corresponding to claim 24 (i.e., a system arranged to perform the "variant" method of claim 24).

- Claim 30*: An "apparatus" claim corresponding to claim 26 (i.e., a system arranged to perform the "variant" method of claim 26).

Given such fundamental deficiencies of Cain as already discussed, it is not necessary to detail additional deficiencies of Cain with respect to other aspects of the rejected claims. Suffice it to note that, as a matter of law, it is impossible for a reference to anticipate any claim unless it teaches each and every feature of the rejected claim.

The rejection of claims 4, 5 and 13 under 35 U.S.C. §103 as allegedly being made "obvious" based on Cain in view of Kalyanasundaram '311 is also respectfully traversed.

Fundamental deficiencies of Cain have already been noted above with respect to parent claims 1 and 11. Kalyanasundaram does not supply those deficiencies. Accordingly, it is not necessary at this time to detail additional deficiencies of this allegedly "obvious" combination of references with respect to other aspects of these rejected claims. Suffice it to note that, as a matter of law, it is impossible to support even a *prima facie* case of "obviousness" unless the cited prior art teaches or suggests each and every feature of the rejected claim.

The rejection of claims 17-19 under 35 U.S.C. §103 as allegedly being made "obvious" based on Cain in view of Tanaka '538 is also respectfully traversed.

Once again, fundamental deficiencies of Cain have already been noted above with respect to parent claim 11. Tanaka does not supply those deficiencies. Accordingly, it is unnecessary at this time to detail additional deficiencies of this allegedly "obvious" combination of references for reasons already noted above.

The rejection of claims 24-27 under 35 U.S.C. §103 as allegedly being made "obvious" based on Cain in view of Ozugur '901 is also respectfully traversed – for similar reasons. In addition, the Examiner's comments with respect to this allegedly

"obvious" combination of references is further analyzed below to demonstrate yet further deficiencies for independent claims 24 and 26.

In relation to claim 24, it will be noted that the Examiner is still relying on Cain's teaching in respect of the steps of:

> "*establishing if a discrepancy exists between the eventual condition of the path characterization metric and a predetermined target condition;*"

and (in the event that it is established that a discrepancy does exist between said eventual condition and said predetermined target condition)

> "*assigning a different initial condition to a further path characterization metric in the event that said provider node subsequently provides further data, said further path characterization metric being associated with said further data.*"

As will be understood from the explanation given above in relation to claim 1, Cain does not, in fact, teach anything corresponding to "*a predetermined target condition*" for the path characterization metric and is, therefore, unable to establish a discrepancy between such a target condition and an eventual condition of the path characterization metric. Cain, therefore, fails to teach a method which includes either of the above two steps.

Ozugur also provides no teaching of a method including these steps. Thus, even a combination of the teachings of Cain and Ozugur would not lead a person of ordinary skill in the art to perform a method according to claim 24.

Similarly, in relation to claim 26, it will be noted that the Examiner is still relying on Cain's teaching in respect of the steps of:

> "*establishing if a discrepancy exists between the eventual condition of the path characterization metric and a pre-determined target condition;*"

(in the event that it is established that a discrepancy does exist between said eventual condition and said predetermined target condition):

> "*assigning an initial condition to a further path characterization metric in the event that said provider node subsequently provides further data, said further path characterization metric being associated with said further data;*"

and

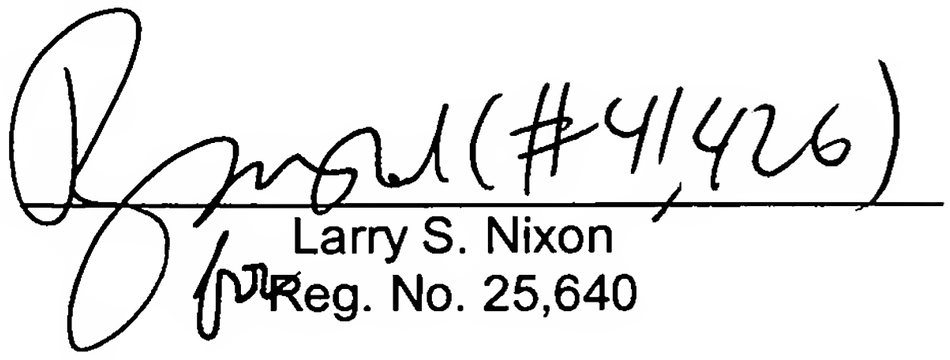
> "*making information relating to the discrepancy between the eventual condition of a previous path characterization metric and said predetermined target condition available to said provider node*". (NB: Not the "intermediate node" as would be required for claim 26.)

Again, as will be understood from the explanation given above in relation to claim 1, Cain does not, in fact, teach anything corresponding to "*a predetermined target condition*" for the path characterization metric and is, therefore, unable to establish a discrepancy between such a target condition and an eventual condition of the path characterization metric. Cain, therefore, fails to teach a method which includes either of the above three steps. Again, Ozugur provides no teaching of a method including these steps. Thus, even a combination of the teachings of Cain and Ozugur would not lead a person of ordinary skill in the art to perform a method according to claim 26.

Accordingly, this entire application is now believed to be in condition for allowance, and a formal notice to that effect is earnestly solicited.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: 
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